RE: Comprehensive Benthic Approach
PETERSON Jenn L
to:
PETERSON Jenn L, Burt Shephard, Joe Goulet, Kristine Koch, POULSEN Mike
10/27/2011 10:38 AM
Hide Details
From: PETERSON Jenn L <PETERSON.Jenn@deq.state.or.us> Sort List...
To: PETERSON Jenn L <PETERSON.Jenn@deq.state.or.us>, Burt Shephard/R10/USEPA/US@EPA, Joe Goulet/R10/USEPA/US@EPA, Kristine Koch/R10/USEPA/US@EPA, POULSEN Mike <POULSEN.Mike@deq.state.or.us>,

Here is some more -

12.3.2 Recommended Benthic Areas of Concern for FS Evaluation

Recommended benthic AOCs, based on the LWG's application of the comprehensive benthic approach upon completion of the draft final BERA, are shown on Maps 12-1a and 12-1b. Sediment toxicity bioassays form the primary LOE for the comprehensive benthic approach used to delineate the recommended benthic AOCs, as per the EPA April 21, 2010, guidelines (EPA 2010a). Predicted toxicity (based on multiple sets of SQVs) and tissue residues (both empirical and predicted) provide secondary LOEs to identify benthic risk areas. TZW and surface water were used as supporting LOEs. SPI data were not used in the development of AOCs because the sampling program was not designed to link SPI image locations with toxicity sampling locations and in turn allow an assessment of the relationship between benthic community successional stage and contaminant effects. Details of the approach used to identify recommended benthic AOCs are as follows:

- Locations with empirical bioassay results indicating significant toxicity were identified.
  - One toxicity endpoint (*Chironomus* biomass or growth, *Hyalella* biomass or growth) exceeding an L3 threshold or two endpoints exceeding an L2 endpoint were considered significant toxicity.
- Locations where significant sediment toxicity is predicted based on sediment chemistry exceeding an MQ of 0.7 or a pMax of 0.59 were identified.
  - Sampling locations where both the MQ and the pMax thresholds were exceeded were considered toxic.
  - Sampling locations where neither the MQ or pMax threshold was exceeded were considered non-toxic.
  - Sampling locations where the models disagreed (i.e., either the MQ or the pMax threshold was exceeded, but not both) were considered uncertain.
- Locations where empirical tissue residues or, in the absence of empirical tissue residue data, predicted tissue residues exceeded their TRVs were identified.
  - The evidence of risk provided by measured or predicted exceedance of metals TRVs was considered weak because of species-specific differences in metals sequestration or other bioregulation.
  - The evidence of risk provided by predicted exceedance of the TBT TRV was considered weak because of high uncertainty in the TBT bioaccumulation model.
- TZW exceedance areas with HQs > 100 were delineated.
- All LOEs were overlaid on a map.

− Areas where two or more adjacent empirical bioassay sampling locations indicate significant toxicity were identified as benthic AOCs.
− Areas where risks were identified at two or more adjacent sampling locations based on chemistry LOEs (predicted toxicity, empirical or predicted bioaccumulation) or a combination of bioassay and chemistry LOEs were identified as benthic AOCs.
− TZW exceedance areas were identified as benthic AOCs.
• Boundaries of the benthic AOCs split the distance between sampling locations exceeding criteria and surrounding clean sampling locations except where:
− Other physical features were present (e.g., pier, channel edge, property boundary), in which case the boundary was drawn at the physical features.
− The nearest sampling sampling location was at a distance greater than 200 ft, in which case the boundary was drawn at a subjective distance less than halfway to nearest sampling location.

From: PETERSON Jenn L
Sent: Thursday, October 27, 2011 10:34 AM
To: 'Burt Shephard'; Goulet.Joe@epamail.epa.gov; 'Koch.Kristine@epamail.epa.gov'; POULSEN Mike
Subject: Comprehensive Benthic Approach

12.3.1 EPA Guidelines for Evaluating Benthic Risk in the Feasibility Study

The LWG's implementation of these guidelines is known by EPA and the LWG as the "comprehensive benthic approach." Developed by the LWG after receiving the EPA's April 21, 2010, directives and guidelines (EPA 2010a), the comprehensive benthic approach was first presented informally to EPA (Eric Blischke and Burt Shephard) by the LWG (John Toll and Jim McKenna) on July 20, 2010, to elicit early feedback. It was formally presented to EPA during the September 29, 2010, LWG Small Technical Group Benthic Toxicity AOPCs Meeting with EPA. Item 11 in Attachment B to the LWG's January 12, 2011, letter to EPA (LWG 2011a), and the attachment to EPA's February 25, 2011, response letter to the LWG (Humphrey 2011) document the decision to proceed with an updated version of the comprehensive benthic approach.